THE CLAIMS

What is claimed is:

1. A method of forming a heat exchanger that comprises:

forming configurations from a sheet of a metal or metal alloy that can be joined by brazing;

thermally spraying a brazing material upon selected portions of the sheet, wherein the brazing material is capable of bonding to the configurations to form one or more braze joints that complete the formation of the one or more fluid passageways; and

heating the configurations or brazing material to a temperature sufficient to melt the brazing material such that it adheres to the configurations to form one or more braze joints to form the heat exchanger.

2. The method of claim 1, wherein the braze material is a metal or alloy that is compatible with the metal or alloy of the sheet.

3. The method of claim 1, wherein the sheet is heated to no more than about 20% above the melting temperature of the brazing material to form the braze joint(s).

4. The method of claim 1, wherein the brazing material is in the form of a powder or a wire.

5. The method of claim 4, wherein the brazing material is applied via a thermal spray gun.

6. The method of claim 1, wherein the thermal spray comprises a plasma or wire arc.

7. The method of claim 1, wherein the brazing material is applied in an inert atmosphere.

8. The method of claim 1, wherein the heating is performed in a furnace.

9. The method of claim 1, wherein the configuration is made to form one or more fluid passageways.

10. The method of claim 9, wherein the configuration is sealed by the braze joint to form one or a plurality of tubes that include the passageway(s).

11. The method of claim 10, wherein a plurality of tubes are provided and are further joined to one or more headers placed in an operative position to direct or receive fluid from the fluid passageways to form the heat exchanger.

12. The method of claim 1, wherein the sheet comprises copper or a copper alloy and the brazing material comprises a copper alloy that is formulated to have a lower melting temperature than that of the sheet.

13. A method of manufacturing an automobile radiator by forming a heat exchanger having one or more fluid passageways according to the method of claim 10.

14. A method of manufacturing an automobile radiator by preparing a plurality of heat exchanger tubes according to claim 11 and connecting the tubes in fluid association to form the automobile radiator.

15. A method of manufacturing an automobile radiator by preparing a plurality of heat exchanger tubes according to claim 10.

16. In a method for manufacturing a heat exchanger, the improvement which comprises forming one or more fluid passageways in the heat exchanger according to the method of claim 10.

17. A method of forming a tube for a heat exchanger that comprises:

providing a sheet of a metal or metal alloy that has a base and two ends;

folding the ends of the sheet to form legs having sides that oppose one another and sides that oppose the base of the sheet;

further folding the ends of the sheet toward one another to form a pair of fluid passageways;

applying a brazing material that can adhere to the sheet material without flux between the opposing sides of the legs and between the base and the sides of the legs that oppose the base of the sheet; and

applying heat to the sheet and brazing material sufficient to melt the brazing material and have it adhere to the legs and the base to join the legs to one another and to the base of the sheet to form the tube.

18. The method of claim 17, wherein the brazing material is in the form of a powder or a wire.

19. The method of claim 17, wherein the brazing material is applied by thermal spraying.

20. The method of claim 19, wherein the thermal spray comprises a plasma or wire arc.

21. The method of claim 17, wherein the brazing material is in the form of a paste comprising a metal or alloy powder filler, a binder, and a carrier.

22. The method of claim 17, wherein the brazing material is in the form of a foil that is placed between the opposing sides of the legs and between the base and the sides of the legs that oppose the base of the sheet.

23. The method of claim 17, wherein the sheet is formed of a material selected from the group consisting of aluminum, aluminum alloys, copper, copper alloys, or stainless steel.

24. The method of claim 17, wherein the sheet is formed of a material other than copper or copper alloys.